

Figure 1

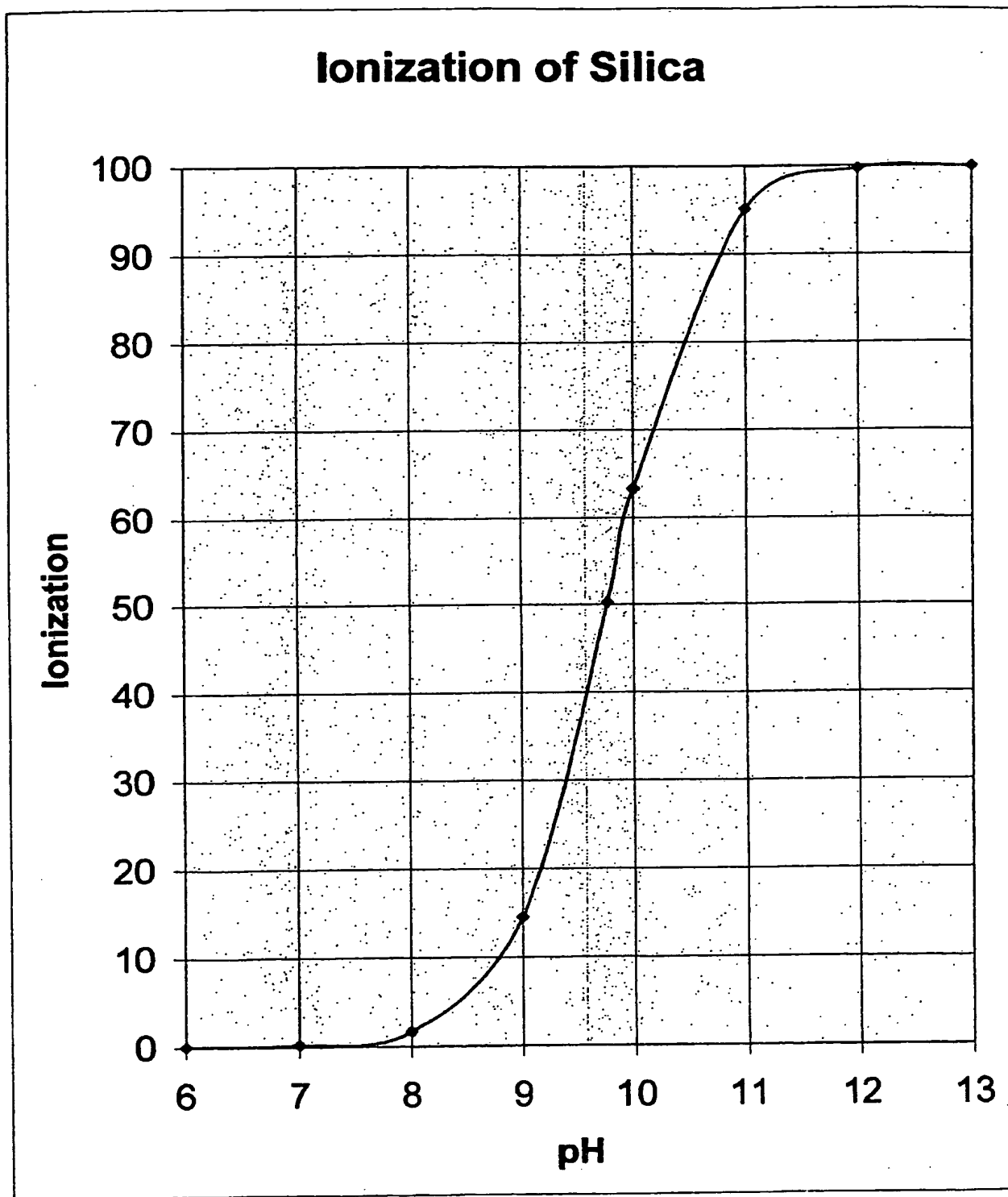
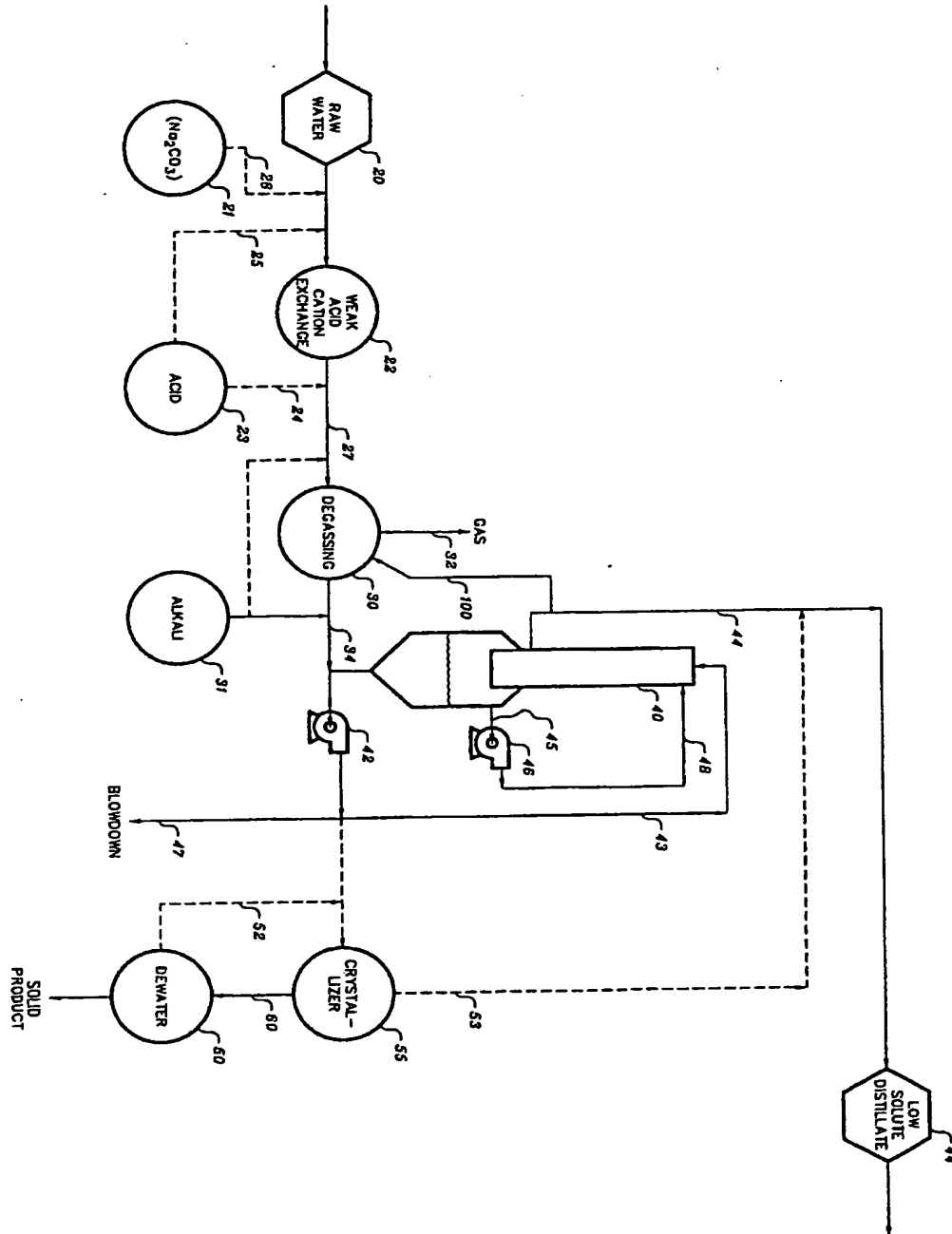


Figure 2



The diagram illustrates a water purification system. It begins with 'RAW WATER' (20) entering a 'WEAK ACID CATION EXCHANGE' column (22). A stream of  $(\text{NO}_2\text{CO}_3)$  (26) is added to the raw water (21), and 'ACID' (23) is added to the cation exchange column (24). The output of the cation exchange column (27) goes to a 'DECASSING' column (30), where 'GAS' (32) is added. The output of the decassing column (34) is pumped (42) into a large rectangular tank (10). Inside this tank, there is a central vertical column (40) and a side column (48). A 'PUMP' (45) circulates liquid between the side column (48) and the main tank (10). 'ALKALI' (31) is added to the main tank (36). The output of the tank (43) goes to a 'CRYSTALLIZER' (55), where 'LOW SOLUTE DISTILLATE' (44) is added. The output of the crystallizer (53) goes to a 'DEWATER' unit (60), which produces 'SOLID PRODUCT' (61) and 'BLOWDOWN' (47). The 'BLOWDOWN' (47) is recycled back to the 'CRYSTALLIZER' (52). The 'LOW SOLUTE DISTILLATE' (44) is also recycled back to the 'CRYSTALLIZER' (53). The 'CRYSTALLIZER' (55) also receives 'REJECT' (77) from the 'EDI' (80) unit. The 'LOW SOLUTE DISTILLATE' (44) is also recycled back to the 'CRYSTALLIZER' (53). The 'LOW SOLUTE DISTILLATE' (44) is also recycled back to the 'CRYSTALLIZER' (53).

Figure 4

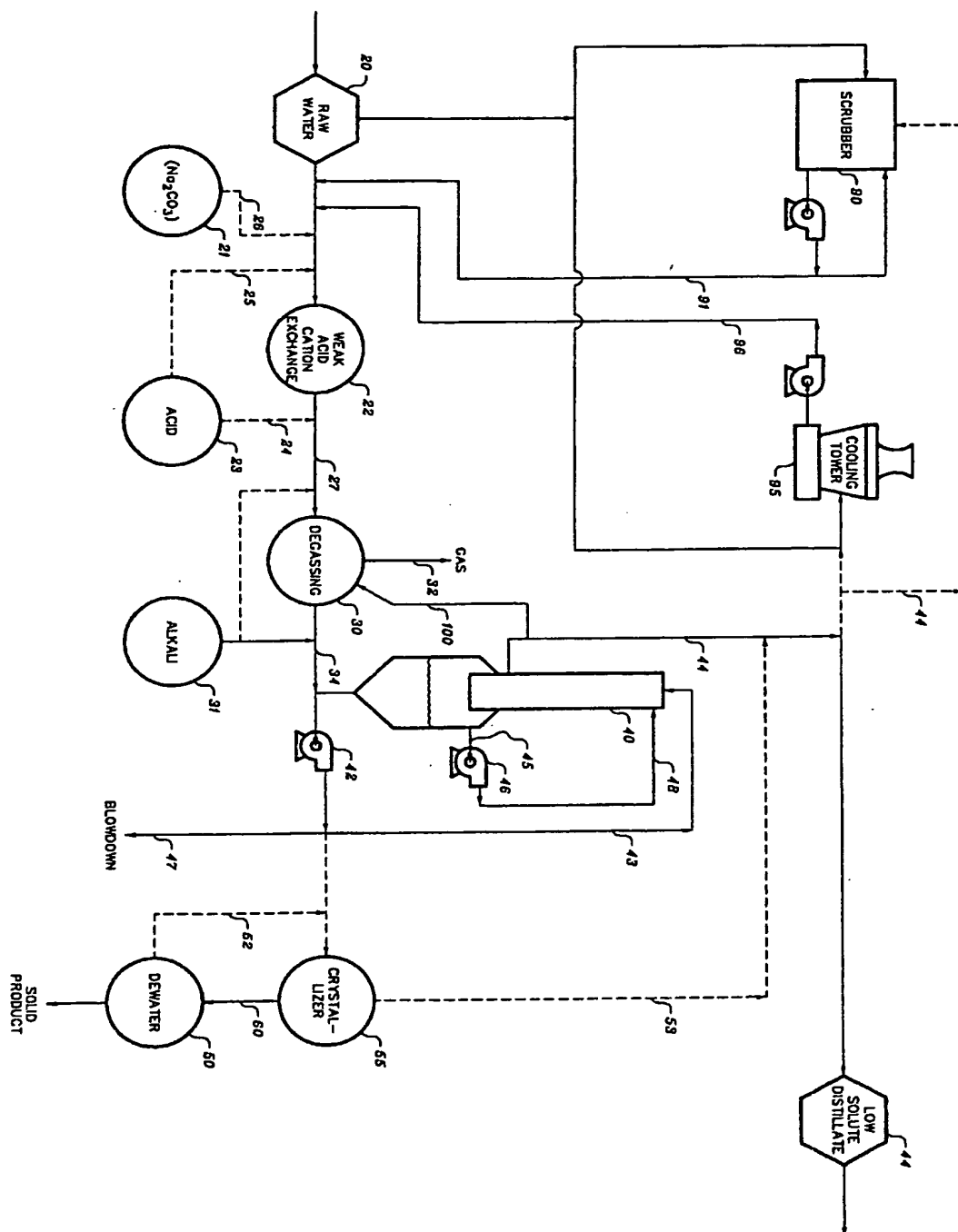


Figure 5

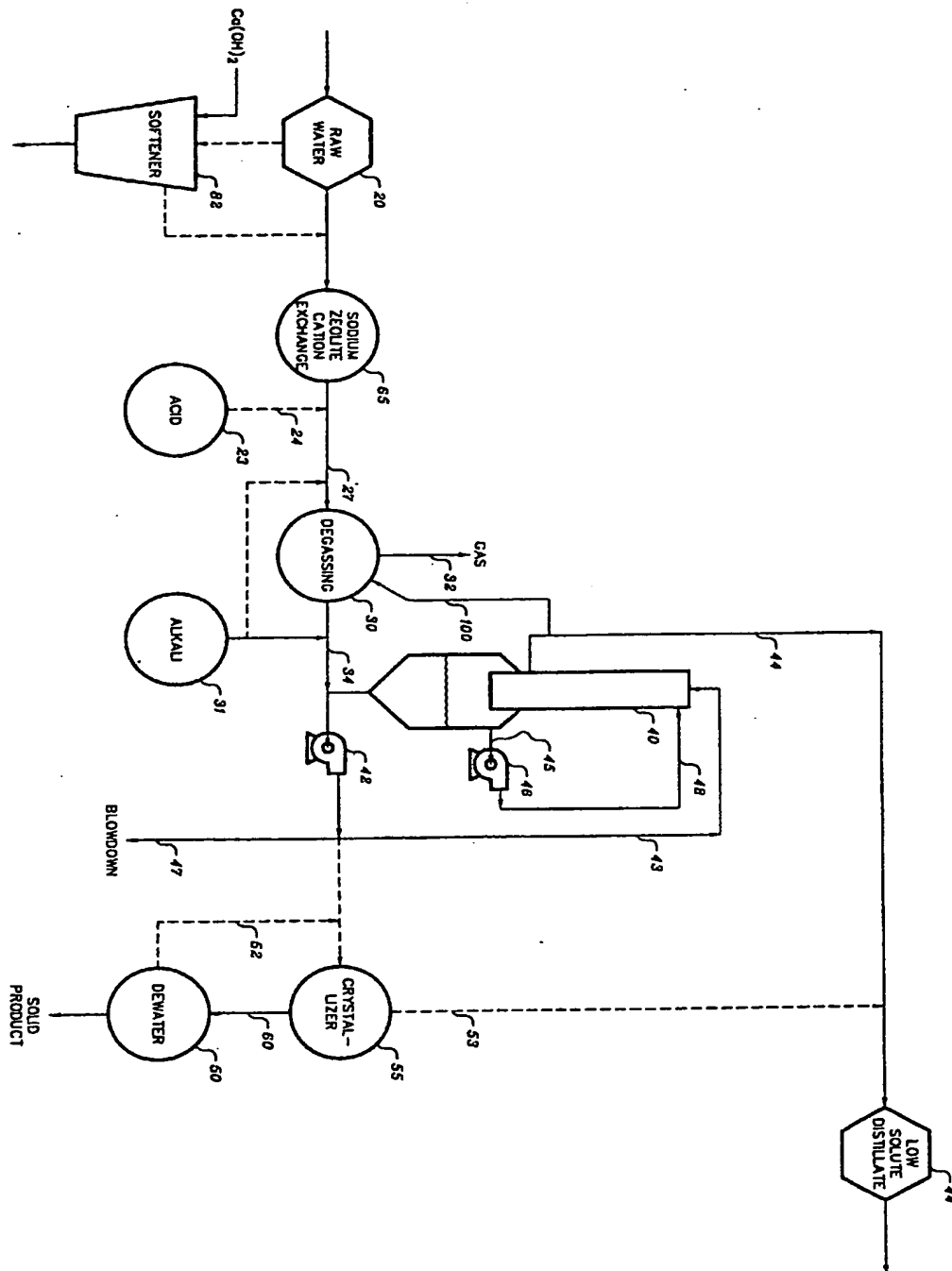


Figure 6

